

REMARKSStatus of the claims:

With the above amendments, claims 33-50 have been added. Thus, claims 1-50 are pending and ready for further action on the merits. Support for claims 33-35 appears at page 4, lines 18-19. Support for claims 36-38 appears at page 4, line 26 to page 5, line 1. Support for claims 39-41 appears at page 7, lines 10-11. Support for claims 42-44 appears at page 5, line 23. Support for claims 45-47 appears at page 14, lines 22-24 and support for claims 48-50 appears at page 14, line 27 to page 15, line 1. Reconsideration is respectfully requested in light of the following remarks.

Rejections under 35 USC §103

Claims 21, 23-25, and 30 have been rejected under 35 USC §103(a) as being unpatentable over Peker '642 (US Patent No. 5,896,642).

Claims 1-20, 22, 26-29 and 31-32 are rejected under 35 USC §103(a) as being unpatentable over Peker '642 in view of Kobayashi '742 (US Patent No. 5,611,742).

These rejections are traversed for the following reasons.

Present Invention

The present invention relates to a golf club head comprising a hitting face for golf balls, with the hitting face formed at least partially by a metallic material, wherein the metallic material satisfies the following relation: $y \geq 0.006x + 60$ wherein x is Young's modulus in units of kgf/mm^2 , and y is tensile strength in units of kgf/mm^2 . The metallic material has a Young's modulus of 3,000 to 12,000 kgf/mm^2 , and a tensile strength of 105 to 175 kgf/mm^2 . The hitting face has at least partially a hitting portion, which consists of said metallic material with a thickness of from 1 to 3 mm.

Disclosure of Peker '642

Peker '642 discloses a metallic article that is fabricated by providing a die and a piece of a bulk-solidifying amorphous metallic alloy having a glass transition temperature. The bulk-solidifying amorphous metallic alloy is heated to a forming temperature of from about $0.75 T_g$ to about $1.2 T_g$ and forced into the die cavity at the forming temperature under an external pressure of from about 260 to about 40,000 pounds per square inch, thereby deforming the piece of the bulk-solidifying amorphous metallic alloy to a formed shape that fills the die cavity. Peker '642 discloses preferred embodiments wherein the pressure is applied to the piece of the bulk-solidifying

amorphous metallic alloy as it is heated, and the heating rate is at least about 0.1°C/s .

Peker '642 fails to disclose a Young's modulus (x) and a tensile strength (y) that satisfies the following equation: $y \geq 0.006x + 60$. Peker '642 also fails to disclose a Young's modulus that is in the range of 3,000 to 12,000 kgf/mm^2 , and a tensile strength in the range of 105 to 175 kgf/mm^2 . Peker '642 also fails to disclose a hitting face that has at least partially a hitting portion, which consists of a metallic material with a thickness of from 1 to 3 mm.

Disclosure of Kobayashi '742

Kobayashi '742 discloses a wood-type golf club head having plural cavities formed in the back surface of a head body. The back surface of the metallic head body is formed with plural cavities, opposite to the face of the head body. The cavities are formed by forging, thus generating even and fine metallic tissues and grain flow. Accordingly, the toughness and durability of the material can be enhanced, so that the face can be made thinner to 1.0 to 3.5 mm thickness for realizing an optional weight distribution. As a result, a larger sweet area can be realized without damaging the strength of the head.

Kobayashi '742 fails to disclose a Young's modulus (x) and a tensile strength (y) that satisfies the following equation: y

$\geq 0.006x + 60$. Kobayashi '742 also fails to disclose a Young's modulus that is in the range of 3,000 to 12,000 kgf/mm² with a tensile strength that is in the range of 105 to 175 kgf/mm². ✓

Removal of the Rejections over Peker '642 and Kobayshi '742

Peker '642 relates to a die-formed amorphous metallic articles and the fabrication thereof. Peker '642 discloses only an iron golf club head, which comprises a head body and a face plate insert. The head body has a recess therein, which functions as the die and the die cavity. The face plate insert is formed by pressing a heated amorphous piece into the recess. That is, the back of the face insert plate of Peker '642 is supported by the head body. Thus, the hitting portion does not consist of a metallic material that is 1 to 3 mm in thickness. ✓

In contrast to the iron head of Peker '642, Kobayashi '742 relates to a wood type golf club head of which the face may be optionally formed when forming the face thinner. In other words, Kobayashi '742 discloses a wood head having a titan face made of metallic alloy with a thickness of from 2 to 3 mm. The head in Kobayashi '742 has the back of the hitting portion not supported by a support member. ✓

Further, Kobayashi '742 lacks a hitting face having a Young's modulus, tensile strength and a Vickers hardness as defined by the instant claims 1, 5 and 21. Because none of ✓

these elements are described, Applicants again submit that the Examiner has failed to make a *prima facie* case of obviousness with regard to the 35 USC §103(a) rejections over Peker '642 and Kobayashi '742. The Examiner is again reminded that three criteria must be met to make out a *prima facie* case of obviousness.

- 1) There must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings.
- 2) There must be a reasonable expectation of success.
- 3) The prior art reference (or references when combined) must teach or suggest all the claim limitations.

See MPEP §2142 and *In re Vaeck*, 20 USPQ2d 1438 (Fed. Cir. 1991). In particular, the Examiner has failed to meet the third element to make a *prima facie* obviousness rejection. Neither Kobayashi '742 nor Peker '642 disclose or suggest a hitting face having a Young's modulus, tensile strength and a Vickers hardness as claimed in the instant claims 1, 5 and 21.

Additionally, the subject matter of the invention of Peker '642 completely differs from the subject matter of the invention of Kobayashi '742. Because the iron head of Peker '642 differs from the wood type head of Kobayashi '742, one of ordinary skill in the art would not combine the two references. Another reason

the artisan of ordinary skill would not combine the references is because the metallic alloy of Peker '642 completely differs ✓
from the metallic alloy of Kobayashi '742.

Finally, the Examiner asserts that because Peker '642 discloses the same materials in the composition as are disclosed in the instant invention, that it would be obvious to modify the composition of Peker '642 to arrive at the instant invention. ✓
Applicants disagree. The Examiner's attention is drawn to the fact that only one golf club head composition appears in Peker '642 (in Examples 1 and 2) yet the Examiner has used a metal composition that is disclosed in column 4, lines 33 et seq. to come close to the instantly claims even though these lines (i.e., column 4, lines 33 et seq.) mention nothing of golf club heads. ✓
Peker '642 provides no motivation for making the golf club heads with any composition other than the composition disclosed in ✓
Examples 1 and 2 in Peker '642.

Accordingly, the Examiner appears to be using hindsight reconstruction to arrive at the instant invention. Only knowledge in advance of the presently claimed invention could lead one of skill in the art to the combination that is taught in the instant invention. However, to "imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art references or record convey or suggest that knowledge is to fall victim to the insidious effect of a hindsight syndrome wherein

that which only the inventor taut is used against its teacher." *W.L. Gore & Assoc. v. Garlock, Inc.* 220 USPQ 303, 311 (Fed. Cir., 1983).

For the above reasons, the rejections over Peker '642 and over Peker '642 in view of Kobayashi '742 are inapposite. Withdrawal of the rejections are warranted and respectfully requested.

With the above remarks and amendments, it is believed that the claims, as they now stand, define patentable subject matter such that a passage of the instant invention to allowance is warranted. A Notice to that effect is earnestly solicited.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicant(s) respectfully petition(s) for a one (1) month extension of time for filing a reply in connection with the present application, and the required fee of \$110.00 is attached hereto.

If any questions remain regarding the above matters, please contact Applicant's representative, T. Benjamin Schroeder (Reg. No. 50,990), in the Washington metropolitan area at the phone number listed below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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By



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claims 33-50 have been added.